

## Appendix 2: Quantifying Emissions Reductions and Cost Effectiveness

### a. Emission Reductions

To estimate the anticipated emission reductions from your project, use the Diesel Emissions Quantifier (DEQ) found at <http://cfpub.epa.gov/quantifier/view/index.cfm>. Based on the vehicle/engine data you provided for the Applicant Fleet Description (template provided), enter the same data into the DEQ. For assistance getting started, please review the Step-by-Step instructions guide (<http://cfpub.epa.gov/quantifier/view/stepbystep.cfm>). Please note you can average certain fields together, such as: model year, vehicle miles traveled, idling hours, usage rate, and horsepower to minimize the number of DEQ runs required. From the DEQ results page (example shown below), enter the Lifetime Amount Reduced for each of the listed pollutants (NO<sub>x</sub>, PM, HC, CO, CO<sub>2</sub>) in Section 2 of your application.

Lifetime	NO <sub>x</sub> (tons)	PM (tons)	HC (tons)	CO (tons)	CO <sub>2</sub> (tons)
<b>Baseline of Entire Fleet</b>	24.4505	0.4202	1.3818	3.7638	2,311.5617
<b>Baseline of Engines Retrofitted</b>	24.4505	0.4202	1.3818	3.7638	2,311.5617
<b>Percent Reduced(%)</b>	0.0%	85.0%	90.0%	90.0%	0.0%
<b>Amount Reduced</b>	0.0000	0.3571	1.2437	3.3874	0.0000
<b>Amount Emitted After Retrofit, Retrofitted Engines</b>	24.4505	0.0630	0.1382	0.3764	2,311.5617
<b>Amount Emitted After Retrofit, Entire Fleet</b>	24.4505	0.0630	0.1382	0.3764	2,311.5617
<b>Capital Cost Effectiveness (\$/ton), Retrofitted Engines</b>	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
<b>Total Cost Effectiveness (\$/ton), Retrofitted Engines</b>	\$ 0.00	\$ 140,001.30	\$ 40,204.08	\$ 14,760.45	\$ 0.00

For further instruction on using the DEQ, please reference the DEQ Users Guide (<http://cfpub.epa.gov/quantifier/view/UserGuide.pdf>) and the DEQ tutorial video (<http://epa.gov/otaq/diesel/webinar.htm#deq>).

## b. Cost-Effectiveness

To estimate the cost-effectiveness of your project, use the DEQ found at <http://cfpub.epa.gov/quantifier/view/index.cfm>. The cost-effectiveness is determined, for the purpose of this RFP, based on the amount of funding the applicant is requesting from DAQ plus the amount of any mandatory cost-share required for repower or replacement projects, if applicable. To determine the cost-effectiveness, enter the dollar amount requested from DAQ plus the amount of any mandatory cost-share required for repower or replacement projects, if applicable, in the DEQ funding information section. To access this section of the DEQ, the user must click on the link “Click here to enter funding information,” as shown below.

Editing Information for Vehicle Group 1 (V1)	
Enter or edit information about this Vehicle Group.	
Selected State:	MI
Select type:	On Highway
Select sector:	School Buses
Application:	School Buses
Quantity:	10
Model Year:	1999
Retrofit Year:	2009
Select fuel type:	Regular Diesel (ULSD), 15 ppm
Enter fuel volume:	15970 gal/yr for group
Calculated fuel volume:	15970 diesel gal/yr for group
Vehicle miles traveled:	13000 miles/vehicle/year
Idling hours (including hours saved):	270 idle hours/vehicle/year
<a href="#">Click here to enter funding information.</a>	

From here, enter the total project amount requested from DAQ in the “EPA” field shown below. If a project has multiple fleets (i.e. school buses and transit buses), enter the total amount requested from DAQ only once. If the project includes repower or replacement enter the amount of any mandatory cost-share required in the “Match/Leveraged” field. DO NOT ENTER ANY VOLUNTARY COST-SHARE FUNDS THAT ARE INCLUDED IN YOUR PROJECT BUDGET.

[Click here to continue without entering funding information.](#)

EPA	\$	50000	State	\$	0
Private	\$	0	SEP	\$	0
Local	\$	0	Match/Leveraged	\$	0
CMAQ	\$	0	Federal	\$	0
Other	\$	0	Unknown	\$	0
<b>Total Project Funding:</b>				\$	50000

From the results page, enter the “Total Cost-Effectiveness” (example shown below) for each of the listed pollutants (NO<sub>x</sub>, PM, HC, CO, CO<sub>2</sub>) in Section 2 of your application.

Lifetime	NOx (tons)	PM (tons)	HC (tons)	CO (tons)	CO2 (tons)
Baseline of Entire Fleet	24.4505	0.4202	1.3818	3.7638	2,311.5617
Baseline of Engines Retrofitted	24.4505	0.4202	1.3818	3.7638	2,311.5617
Percent Reduced(%)	0.0%	85.0%	90.0%	90.0%	0.0%
Amount Reduced	0.0000	0.3571	1.2437	3.3874	0.0000
Amount Emitted After Retrofit, Retrofitted Engines	24.4505	0.0630	0.1382	0.3764	2,311.5617
Amount Emitted After Retrofit, Entire Fleet	24.4505	0.0630	0.1382	0.3764	2,311.5617
Capital Cost Effectiveness (\$/ton), Retrofitted Engines	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Total Cost Effectiveness (\$/ton), Retrofitted Engines	\$ 0.00	\$ 140,001.30	\$ 40,204.08	\$ 14,760.45	\$ 0.00